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EXAMINER	
LAXTON, GARY L	

ART UNIT	PAPER NUMBER
2838	

DATE MAILED: 06/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/017,069	PEREZ, DANIEL	
	Examiner	Art Unit	
	Gary L. Laxton	2838	

-- The MAILING DATE of this communication appears on the cover sh et with the correspond nce address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 February 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *13 December 2001* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☒ Interview Summary (PTO-413) Paper No(s)/Mail Date. *052504*.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1-7 have been considered but are moot in view of the new ground(s) of rejection necessitated by amendment.

2. Applicant's arguments filed 2/23/04 regarding claims 8-11 have been fully considered but they are not persuasive.

In response to applicant's argument that there is no suggestion to combine Kim et al with Malinowski and to also combine Kosugi with Malinowski, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Kim et al and Kosugi disclose overload protection circuits as claimed in the instant invention. Malinowski teaches a security system with a power supply that requires protection from overload but does not disclose a protection system as claimed by the applicant in the instant invention. The applicant argues that Malinowski's system can continue to function at length if power is interrupted by a blown fuse by utilizing a battery back-up; thus, the applicant argues that Malinowski teaches away from any need to combine a sophisticated resetting power supply with a security system. However, as the applicant explains in the background of the specification (page 2, 1st and 2nd paragraph) that

when prior art systems burn out or the circuit breaker opens to create an open circuit, the system needs servicing in order to reset the circuit, have the fuse replaced or reset the breaker in order to make the circuit operational again. The problem causing the overload must also be identified and corrected, in order for the power to be turned back on and resume as normal. Such a procedure can be costly and time consuming. The applicant continues discussing the problems of the prior art and conclusively identifies a need in the art (page 2, 2nd paragraph); "Thus, what is needed is gate security system that will automatically reset itself and recommence operation as soon as the problem causing the overload is removed. A system that does not require a trial and error troubleshooting process of shutting down of power to the system and replacement of fuses or resetting of circuit breakers several times until the cause of the overload or short is finally discovered." Malinowski fits this description of the exact type of prior art in need of an automatic resetting circuit such as Kim et al and Kosugi. Malinowski's back up battery will only last so long until the fuse or circuit breaker must be serviced by a technician. Therefore, the applicant's argument that Malinowski teaches away from any need to combine a sophisticated resetting power supply, such as Kim et al and Kosugi, with a security system, such as Malinowski's, is far removed.

Therefore, it is the examiner's position that it would have been obvious to one of ordinary skill in the art to apply an automatic resetting protection circuit such as Kim et al and Kosugi to a security system that does not reset itself but requires protection from overload, such as Malinowski in order for the power supply to automatically reset itself and recommence operation as soon as the problem causing the overload is removed; thereby avoiding having to send a

servicing technician to correct the problem and reset the circuit, thereby saving time and money. Accordingly, the rejections have been maintained.

Drawings

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the switching oscillator controlling the switch and being controlled by the controller of claim 1 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

4. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

As noted in the previous office action, there are numerous methods and apparatuses for preventing overload in circuits; therefore, the title is not clearly indicative of the invention to which the claims are directed. The applicant could mention the fuseless and automatic reset features of the application to distinguish between the multitude of other methods and apparatuses for preventing overload in circuits.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 1, 5, 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al (US 5,774,321) in view of Balakrishnan et al (US 6,337,788).

Concerning claim 1, Kim et al disclose a power supply circuit with overload protection (figure 1) comprising: a current sensor (Rs) for sensing the levels of current entering a circuit (200); a controller (circuits 110, 120, 130, 150, 160) that monitors current levels sensed by the current sensor; a switch (M1) responsive to the controller wherein the controller opens the switch to thereby turn off current entering the circuit (200) when a specific current level is sensed (abstract; col. 3 lines 1-17); and wherein the control circuit continues to periodically (timer circuit 120 toggles latch 130; abstract; col. 3 lines 53-56) sense current levels at the current sensor and closes the switch (M1) when current levels have fallen below the preset level and thereby allow current to flow into the circuit (200) again (abstract; col. 3 lines 44-56).

However, Kim et al do not disclose a switching oscillator controlling the switch and having the controller stop the switching oscillator to turn off current entering the circuit when a specific current level is sensed; and wherein the controller starts the switching oscillator to control the switch when current levels have fallen below the preset level and to allow current to flow into the circuit again.

Balakrishnan et al teach that it is known in the electrical arts to use oscillators to control switches. Furthermore, Balakrishnan et al teach that it is known to stop the oscillator circuit when a fault condition arises and to restart the oscillator when the fault clears. Balakrishnan et al teach disabling the oscillator to protect the power conversion system (abstract). Balakrishnan et al also teach that in such cases, regulator circuit detects that a power supply is short circuited and overloaded at the output or has encountered an open loop condition. In any of these fault conditions, the regulator circuit goes into a mode called "auto-restart." In the auto-restart mode, the regulator circuit tries to start the power supply periodically by delivering full power for a period of time (greater than needed for start up) and turns off the power supply for another period of time that is approximately four to ten times longer. As long as the fault condition is present, the regulator circuit remains in this auto-restart mode limiting the average output power to a safe, low value. When the fault is removed, auto-restart enables the power supply to start-up automatically.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Kim et al to include a switching oscillator to control the switch and to have the controller stop the switching oscillator to turn off current entering the circuit when a specific current level is sensed; and wherein the controller starts the switching oscillator to control the switch when current levels have fallen below the preset level and to allow current to flow into the circuit again as taught by Balakrishnan et al in order to protect the power conversion system.

Concerning claim 5, switch M1 is a semiconductor device connected to the controller (circuits 110, 120, 130, 150, 160) to perform switching functions in response to a signal from the controller, obviously.

Concerning claim 6, a power indictor and an overload indicator (170) actively attached to the circuit (200) to respectively signal the circuit is operating within normal parameters or is in an overload condition (col. 3 lines 19-21: "off" normal – "on" fault detected) .

Concerning claim 7, the controller after shutting off said switch as the result of sensing preset current levels periodically turns on said switch for a momentary period of time to determine if preset or greater amounts of current will still be continued to be drawn (col. 3 lines 55 and 56).

7. Claims 1-5 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kosugi (US 5,568,343) in view of Balakrishnan et al (US 6,337,788).

Concerning claim 1, Kosugi discloses a power supply circuit with overload protection (figure 1) comprising: a current sensor (142) for sensing the levels of current entering a circuit (116, load); a controller (circuits 144, 146, 154, 152) that monitors current levels sensed by the current sensor; a switch (120) responsive to the controller wherein the controller opens the switch to thereby turn off current entering the circuit when a specific current level is sensed (abstract; col. 3 lines 63-67; col. 4 lines 1-20); and wherein the control circuit continues to periodically sense current levels at the current sensor and closes the switch (120) when current levels have fallen below the preset level and thereby allow current to flow into the circuit again (abstract; col. 4 lines 20-30).

However, Kosugi does not disclose a switching oscillator controlling the switch and having the controller stop the switching oscillator to turn off current entering the circuit when a specific current level is sensed; and wherein the controller starts the switching oscillator to control the switch when current levels have fallen below the preset level and to allow current to flow into the circuit again.

Balakrishnan et al teach that it is known in the electrical arts to use oscillators to control switches. Furthermore, Balakrishnan et al teach that it is known to stop the oscillator circuit when a fault condition arises and to restart the oscillator when the fault clears. Balakrishnan et al teach disabling the oscillator to protect the power conversion system (abstract). Balakrishnan et al also teach that in such cases, regulator circuit detects that a power supply is short circuited and overloaded at the output or has encountered an open loop condition. In any of these fault conditions, the regulator circuit goes into a mode called "auto-restart." In the auto-restart mode, the regulator circuit tries to start the power supply periodically by delivering full power for a period of time (greater than needed for start up) and turns off the power supply for another period of time that is approximately four to ten times longer. As long as the fault condition is present, the regulator circuit remains in this auto-restart mode limiting the average output power to a safe, low value. When the fault is removed, auto-restart enables the power supply to start-up automatically.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Kosugi to include a switching oscillator to control the switch and to have the controller stop the switching oscillator to turn off current entering the circuit when a specific current level is sensed; and wherein the controller starts the switching oscillator

to control the switch when current levels have fallen below the preset level and to allow current to flow into the circuit again as taught by Balakrishnan et al in order to protect the power conversion system

Concerning claim 2, Kosugi discloses voltage produced by the circuit is regulated (col. 3 lines 53 and 54).

Concerning claim 3, Kosugi discloses a voltage monitor for monitoring voltage produced by the circuit and said controller regulates voltage levels produced by said circuit based on readings from said voltage monitor to which said controller is actively connected (figure 2, Vout, 112; col. 3 lines 45-52).

Concerning claim 4, Kosugi discloses a filter (capacitors in rectifier 116 of figure 2 provide filtering) to filter the voltage generated by the circuit.

Concerning claim 5, Kosugi discloses switch 120 is a semiconductor device (see figure 2) connected to the controller (152,) to perform switching functions in response to a signal from the controller, obviously.

Concerning claim 7, Kosugi discloses the controller (circuits 144, 146, 154, 152) after shutting off said switch as the result of sensing preset current levels periodically turns on said switch for a momentary period of time to determine if preset or greater amounts of current will still be continued to be drawn (col. 4 lines 20-30).

8. Claims 8, 9 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al (US 5,774,321) in view of Malinowski (US 5,638,046).

Concerning claim 8, Kim et al discloses a method for preventing overload in circuit comprising the steps of: a) monitoring current levels of current entering a circuit (figure 1, Rs); b) shutting the circuit down when the current levels reach a preset level (abstract; col. 44-54); c) continuing to sample the current being supplied for the circuit (col. 3 lines 54-56); d) determining when the current levels of the current being supplied to the circuit have fallen below the preset levels (col. 3 lines 55, 56); e) resetting the circuit to accept current for operation after determining the current levels have fallen below the preset levels (col. 3 lines 57-65); and f) continuing to monitor the current levels after resetting of the circuit (col. 3 lines 32-42).

However, Kim et al do not disclose a security system circuit.

Malinowski teaches a security system with a power supply (28) for providing power to the security system.

It would have been obvious to provide a power supply with overload protection in order to prevent damage to the load circuit (e.g. security system).

Therefore, it would have been obvious to utilize a power supply system with load protection functions taught by Kim et al in the circuit of Malinowski (28 of figure 2) in order to provide a power supply that is protected from overload in order to prevent damage to the load circuit (e.g. the security system circuit).

Concerning claim 9, Kim et al disclose monitoring the current levels to determine if they have returned to acceptable levels includes (abstract; col. 3 lines 30-60): momentarily allowing

the circuit to draw current to determine the levels at which the circuit is drawing current and determine if they have fallen below the preset levels (col. 3 lines 55 and 56).

Concerning claim 11, Kim et al disclose indicating (indicator (170)) that the circuit is experiencing an overload.

9. Claims 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kosugi (US 5,568,343) in view of Malinowski (US 5,638,046).

Concerning claim 8, Kosugi discloses a method for preventing overload in circuit comprising the steps of: a) monitoring current levels of current entering a circuit (figure 1, 132); b) shutting the circuit down when the current levels reach a preset level (134); c) continuing to sample the current being supplied for the circuit (col. 4 lines 28-30); d) determining when the current levels of the current being supplied to the circuit have fallen below the preset levels (134); e) resetting the circuit to accept current for operation after determining the current levels have fallen below the preset levels (col. 4 lines 28-30); and f) continuing to monitor the current levels after resetting of the circuit (col. 3 lines 54-67; col. 4 lines 1-20).

However, Kosugi do not disclose a security system circuit.

Malinowski teaches a security system with a power supply (28) for providing power to the security system.

It would have been obvious to provide a power supply with overload protection in order to prevent damage to the load circuit (e.g. security system).

Therefore, it would have been obvious to utilize a power supply system with load protection functions taught by Kosugi in the circuit of Malinowski (28 of figure 2) in order to

provide a power supply that is protected from overload in order to prevent damage to the load circuit (e.g. the security system circuit).

Concerning claim 9, Kosugi discloses monitoring the current levels to determine if they have returned to acceptable levels includes (abstract; col. 4 lines 20-38): momentarily allowing the circuit to draw current to determine the levels at which the circuit is drawing current and determine if they have fallen below the preset levels (col. 4 lines 28-30).

Concerning claim 10. Kosugi provides a regulated power supply (col. 3 lines 52 and 53).

10. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al (US 5,774,321) in view of Sabroff (US 5,119,013).

Concerning claim 12, Kim et al disclose a power supply circuit with overload protection (figure 1) comprising: a current sensor (Rs) for sensing the levels of current entering a circuit (200); a controller (circuits 110, 120, 130, 150, 160) that monitors current levels sensed by the current sensor; a switch (M1) responsive to the controller wherein the controller opens the switch to thereby turn off current entering the circuit (200) when a specific current level is sensed (abstract; col. 3 lines 1-17); and wherein the control circuit continues to periodically (timer circuit 120 toggles latch 130; abstract; col. 3 lines 53-56) sense current levels at the current sensor and closes the switch (M1) when current levels have fallen below the preset level and thereby allow current to flow into the circuit (200) again (abstract; col. 3 lines 44-56).

However, Kim et al does not discloses an apparatus driven by the switch to produce a first output voltage and a second output voltage, the second output voltage being different from

the first output voltage and wherein the controller senses the first and second output voltages and controls the switch to regulate the first and second output voltages.

Regulating more than one output voltage is already known in the art. Sabroff provides an example of a method and apparatus used to regulate plural output voltages of different magnitudes accomplished with the use of separate regulators for each output in order to provide different voltage levels for loads that require more than one voltage.

Therefore, it would a have been obvious to one having ordinary skill in the art at the time the invention was made to modify the circuit of Kim et al to include multiple regulated output voltages for loads that require more than one level of operating voltages without having to use separate regulators for each output voltage as taught by Sabroff.

11. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kosugi (US 5,568,343) in view of Sabroff (US 5,119,013).

Concerning claim 12, Kosugi discloses a power supply circuit with overload protection (figure 1) comprising: a current sensor (142) for sensing the levels of current entering a circuit (116, load); a controller (circuits 144, 146, 154, 152) that monitors current levels sensed by the current sensor; a switch (120) responsive to the controller wherein the controller opens the switch to thereby turn off current entering the circuit when a specific current level is sensed (abstract; col. 3 lines 63-67; col. 4 lines 1-20); and wherein the control circuit continues to periodically sense current levels at the current sensor and closes the switch (120) when current levels have fallen below the preset level and thereby allow current to flow into the circuit again (abstract; col. 4 lines 20-30).

However, Kosugi does not discloses an apparatus driven by the switch to produce a first output voltage and a second output voltage, the second output voltage being different from the first output voltage and wherein the controller senses the first and second output voltages and controls the switch to regulate the first and second output voltages.

Regulating more than one output voltage is already known in the art. Sabroff provides an example of a method and apparatus used to regulate plural output voltages of different magnitudes accomplished with the use of separate regulators for each output in order to provide different voltage levels for loads that require more than one voltage.

Therefore, it would a have been obvious to one having ordinary skill in the art at the time the invention was made to modify the circuit of Kosugi to include multiple regulated output voltages for loads that require more than one level of operating voltages without having to use separate regulators for each output voltage as taught by Sabroff.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US 5,400,206 Barnes et al disclose an overcurrent protection circuit provided with a counter which permits a preselected number of reinitiations of current following the detection of an overcurrent condition. Each stoppage of current in response to the detection of an overcurrent condition is followed by a predetermined time delay and a subsequent reinitiation of current.

US 4,761,702 Pinard discloses an overcurrent shut down circuit for use in a switching regulator power supply comprising circuitry for detecting the average current of a pulse width modulated input signal, comparing the average current with a predetermined threshold level and

shutting off the power supply in the event the detected current exceeds the threshold level. Time delay circuitry is provided for resetting the shut down circuit and restoring the regulator to normal operation after a predetermined amount of time as elapsed subsequent to the power supply being shut down.

US 4,344,101 Oishi et al disclose a circuit which automatically open-circuits a main lead to an input circuit in response to an excessive overcurrent. The circuit will automatically sense the existence of an excessive current which open-circuits a main lead to the input circuit. With the main-lead to the input circuit open-circuited, the base voltage at a first transistor drops. This renders this transistor non-conductive and causes the main-lead to the input circuit to short-circuit. This restores the circuit to its initial condition. If the excessive current is continuing, the above sequence will re-commence, the sequence continuing until the excessive current no longer exists.

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gary L. Laxton whose telephone number is (571) 272-2079. The examiner can normally be reached on Monday thru Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Sherry can be reached on (571) 272-2084. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

5/28/04

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